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ART UNIT	PAPER NUMBER
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SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	01/03/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary	Application No.	Applicant(s)	
	09/764,073	NOZAKI ET AL.	
	Examiner	Art Unit	
	Clement B. Graham	3692	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *11 October 2006*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1 and 5-23* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1, 5-23* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

1. Claims 1, 5-23, remained pending and claims 2-4 has been deleted.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

3. Claims 1, 5-23, are rejected under 35 U.S.C. 103(a) as being unpatentable over Trygg et al (Hereinafter Trygg U.S. Patent 6, 853, 923) in view of Giles U.S Patent 5, 850, 339 in view of Morrison US Patent 5, 727128 in view of Sasaki U.S Patent 5, 959, 672.

As per claims 1, Trygg discloses a score calculation method for calculating a score from an input data including a plurality of attributes comprising:
preparing a plurality of prediction models (see column 2 lines 38-67 and column 3-5 lines 1-67 and column 6-24 lines 1-67) arranged in a hierarchical tree structure in the computer and calculating with the prediction model in a first root layer of hierarchical tree structure(see column 2 lines 38-67 and column 3-5 lines 1-67 and column 6-24 lines 1-67) an output value ("i. e, optimal value") from at least one attribute included in the input data by a calculation unit of the computer and selecting of the prediction models in a subsequent layer of the hierarchical tree structure according to a result by a selection unit of the computer (see column 2 lines 38-67 and column 3-5 lines 1-67 and column 6-24 lines 1-67) repetitiously executing the output value calculation step and the subsequent selection step while shifting the layer to a leaf side of the hierarchical tree structure until the prediction model of a final leaf layer of the hierarchical tree structure is reached and calculating a score from the input data using the prediction model of the final leaf layer by the calculation unit. (see column 2 lines 38-67 and column 3-5 lines 1-67 and column 6-24 lines 1-67).

Trygg fail to explicitly teach hierarchical tree structure.

However Giles discloses many of the traditional cluster analysis methods, both partitioning and hierarchical, are encumbered by looking for many or all possible clusters within the data this is followed by a cluster consolidation process(see column 2 lines 39-63) and After initialization and input processes, the inventive method finds the optimal "boundary" for each numeric independent input variable and calculates a "score" for each independent input variable, whether the variable is numeric or categoric. The method then finds the best "boundary(ies)" and highest "score" for the combination of the two highest scoring independent variables and is repeated for the three highest scoring independent variables. This can be repeated for any number of independent variables and the "score" which is critical to the analysis process is basically a decision criteria. While there are many ways to calculate a "score", the following describes an exemplary way which appears to work well for manufacturing data. First, a numeric variable value is defined as "included" if the value is between the "boundary" and the maximum or minimum value for that variable, depending on whether the "boundary" is on the high or low side of the average for that variable. For categoric variables, "included" is determined by which of two values (i.e., categories) the variable has. One type of outcome is referred to as "bad", and the other is referred to as "good". For combinations of variables, the values of all of the variables for a particular process operation must be within the defined region of parameter space for the record associated with that operation to be "included". An exemplary "scoring" method used within the exemplary program is as follows.(see column 4 lines 48-67 and column 5 lines1-5).

Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the teachings of Trygg to include arranged in a hierarchical tree structure in the computer for calculating with the prediction model in a first root layer of the hierarchical tree structure, an output value from at least one attribute included in the input data by a calculation unit of the computer taught by Giles in order to determining the combination of variables and values of those variables which are most likely to result in specific outcomes.

Trygg and Giles fail to explicitly teach comparing the output value with a threshold and comparison result.

However Morrison discloses to implement a PLS or other regression analysis, the block 114 first develops a set of training and/or test records from the data values or the selected potential model input and output variables, wherein each training and/or test record has one value for each of the selected potential model input and output variables. The block 114 then runs, for example, a PLS routine to calculate a correlation or regression coefficient b which identifies the correlation between an output score matrix U and an input score matrix T developed from the values of the selected potential model input and output variables.(see column 12 lines 23-32 and column 5 lines 7-67).

Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the teachings of Trygg and Giles to include comparing the output value with a threshold and comparison result taught by Morrison in order to construct models of a process based on process data measured during previous runs of that process and more particularly to system and method of automatically determining an appropriate set of input variables for use in a process model.

Trygg, Giles and Morrison fail to explicitly teach wherein any one of the prediction models of any other than the final leaf is one of a scoring model to calculate a score from attributes of the input data and an attribute prediction model to predict from attributes of input data a value of another attribute and wherein the prediction models of the final leaf layer are scoring models.

However Sasaki discloses Secondly, a description will be taken hereinbelow of a feature of this embodiment. That is, the arrangement of an area extraction and recognition processing section 25 is as follows. In the area extraction and recognition processing section 25, an object area extraction section 26 carries out an object area extraction processing, which will be described later, on the basis of motion vector information given from the motion detecting section 20 and outputs information to a template data base 27. Further, a 2D (two-dimensional) template matching section 28 fulfills a matching processing on the basis of the data from the template data base 27 to supply the process result to the object area extraction section 26 and the channel

encoding section 10. A model-based prediction section 29 reads out the data from a three-dimensional shape data base 30 and implements the picture reproduction processing in a model-based mode on the basis of the data stored in a person memory 31 and a background memory 32, with the process result being given as a subtraction input through the channel encoding section 10 and the change-over switch 18 to the subtracter 8. The person memory 31 and the background memory 32 receive and store the person data and the background data from the object area extraction section.(see column 16 lines 1-67 and column
and column 17-8 lines 1-67) and column 2 lines 1-65).

Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the teachings of Trygg, Giles and Morrison to include wherein any one of the prediction models of any other than the final leaf is one of a scoring model to calculate a score from attributes of the input data and an attribute prediction model to predict from attributes of input data a value of another attribute and wherein the prediction models of the final leaf layer are scoring models taught by Sasaki in order to calculate scores using input data.

As per claim 5, Trygg discloses, wherein said selection of the prediction model in the subsequent layer is determined according to the output value and a category to which the output value belongs by the selection unit. (see column 2 lines 38-67 and column 3-5 lines 1-67 and column 6-24 lines 1-67).

As per claim 6, Trygg discloses further comprising the step of displaying a number of uses of an attribute used in the all layers on a display unit connected to a computer. (see column 2 lines 38-67 and column 3-5 lines 1-67 and column 6-24 lines 1-67).

As per claim 7, Trygg further comprising the step of displaying prediction models used in the layers and output values thereof on a display unit connected to a computer. (see column 2 lines 38-67 and column 3-5 lines 1-67 and column 6-24 lines 1-67).

As per claim 13, Trygg discloses wherein each of the prediction models of leaf layers other than the final leaf layer is an attribute prediction model for predicting a

value of other attribute of the input data from at least one attribute of the input data. (see column 2 lines 38-67 and column 3-5 lines 1-67 and column 6-24 lines 1-67).

As per claim 8, 14, Trygg discloses a score calculation system for calculating a score from an input data including a plurality of attributes, comprising:
calculation means in a computer for processing input data using a plurality of prediction models (see column 2 lines 38-67 and column 3-5 lines 1-67 and column 6-24 lines 1-67) arranged in a selecting means in the computer for selecting the prediction model in a subsequent layer (see column 2 lines 38-67 and column 3-5 lines 1-67 and column 6-24 lines 1-67) and display means connected to the computer for displaying a score(see column 10 lines 34-46) wherein the calculation means calculates an output value (i. e, optimal value") with the prediction model(see column 2 lines 38-67 and column 3-5 lines 1-67 and column 6-24 lines 1-67) in an N-th layer (N >= 1) ("i. e, multiplicity of the same function") from at least one attribute included in the input data said selecting means selects one of the prediction models in the (N + 1)-th layer according to the output value of the prediction model of the N-TH calculation means and selecting means repetitiously executing the output value calculation and the (N+1) th layer prediction model selection while incrementing N until the prediction model of a final leaf layer of the hierarchical tree structure is reached and selects one of prediction models of the final leaf layer calculation means calculating a score from the input data using the selected prediction model of the final leaf layer and said display means displays the score output from said final leaf layer prediction model. (see column 2 lines 38-67 and column 3-5 lines 1-67 and column 6-24 lines 1-67).

Trygg fail to explicitly teach hierarchical tree structure.
However Giles discloses many of the traditional cluster analysis methods, both partitioning and hierarchical, are encumbered by looking for many or all possible clusters within the data this is followed by a cluster consolidation process(see column 2 lines 39-63) and After initialization and input processes, the inventive method finds the optimal "boundary" for each numeric independent input variable and calculates a "score" for each independent input variable, whether the variable is numeric or categoric. The method then finds the best "boundary(ies)" and highest "score" for the

combination of the two highest scoring independent variables and is repeated for the three highest scoring independent variables. This can be repeated for any number of independent variables and the "score" which is critical to the analysis process is basically a decision criteria. While there are many ways to calculate a "score", the following describes an exemplary way which appears to work well for manufacturing data. First, a numeric variable value is defined as "included" if the value is between the "boundary" and the maximum or minimum value for that variable, depending on whether the "boundary" is on the high or low side of the average for that variable. For categoric variables, "included" is determined by which of two values (i.e., categories) the variable has. One type of outcome is referred to as "bad", and the other is referred to as "good". For combinations of variables, the values of all of the variables for a particular process operation must be within the defined region of parameter space for the record associated with that operation to be "included". An exemplary "scoring" method used within the exemplary program is as follows.(see column 4 lines 48-67 and column 5 lines1-5).

Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the teachings of Trygg to include arranged in a hierarchical tree structure in the computer for calculating with the prediction model in a first root layer of the hierarchical tree structure, an output value from at least one attribute included in the input data by a calculation unit of the computer taught by Giles in order to determining the combination of variables and values of those variables which are most likely to result in specific outcomes.

Trygg, Giles and Morrison fail to explicitly teach wherein any one of the prediction models of any other than the final leaf is one of a scoring model to calculate a score from attributes of the input data and an attribute prediction model to predict from attributes of input data a value of another attribute and wherein the prediction models of the final leaf layer are scoring models.

However Sasaki discloses Secondly, a description will be taken hereinbelow of a feature of this embodiment. That is, the arrangement of an area extraction and recognition processing section 25 is as follows. In the area extraction and recognition

processing section 25, an object area extraction section 26 carries out an object area extraction processing, which will be described later, on the basis of motion vector information given from the motion detecting section 20 and outputs information to a template data base 27. Further, a 2D (two-dimensional) template matching section 28 fulfills a matching processing on the basis of the data from the template data base 27 to supply the process result to the object area extraction section 26 and the channel encoding section 10. A model-based prediction section 29 reads out the data from a three-dimensional shape data base 30 and implements the picture reproduction processing in a model-based mode on the basis of the data stored in a person memory 31 and a background memory 32, with the process result being given as a subtraction input through the channel encoding section 10 and the change-over switch 18 to the subtracter 8. The person memory 31 and the background memory 32 receive and store the person data and the background data from the object area extraction section.(see column 16 lines 1-67 and column
and column 17-8 lines 1-67) and column 2 lines 1-65).

Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the teachings of Trygg, Giles and Morrison to include wherein any one of the prediction models of any other than the final leaf is one of a scoring model to calculate a score from attributes of the input data and an attribute prediction model to predict from attributes of input data a value of another attribute and wherein the prediction models of the final leaf layer are scoring models taught by Sasaki in order to calculate scores using input data.

As per claim 9, Trygg discloses wherein said calculation means and said selecting means are implemented respectively by different computers. (see column 2 lines 38-67 and column 3-5 lines 1-67 and column 6-24 lines 1-67).

As per claim 10, Trygg discloses wherein said calculation means is installed on a computer models are executing respective prediction models. (see column 2 lines 38-67 and column 3-5 lines 1-67 and column 6-24 lines 1-67).

As per claim 11, Trygg discloses an apparatus comprising a storage medium with a program for calculating a score(see column 33 lines 39-48) from an input data

including a plurality of attributes stored therein the program when executed causing a computer to, execute the steps of:

preparing a plurality of prediction models (see column 2 lines 38-67 and column 3-5 lines 1-67 and column 6-24 lines 1-67) arranged in a the computer for calculating with the prediction model in a first root layer (see column 2 lines 38-67 and column 3-5 lines 1-67 and column 6-24 lines 1-67) an output value from at least one attribute included in the input data by a calculation unit of the computer and selecting the prediction model in a subsequent layer according to the output value by a selection unit of the computer(see column 44 lines 9-44) repetitiously ("i. e, repeatedly") executing the output value calculation step and the subsequent layer prediction model selection step while shifting the layer to a leaf side until the prediction model of a final leaf layer of the (see column 2 lines 38-67 and column 3-5 lines 1-67 and column 6-24 lines 1-67) is reached and calculating a score(see column 33 lines 39-48) from the input data using the prediction model of the final leaf layer by the calculation unit(see column 2 lines 38-67 and column 3-5 lines 1-67 and column 6-24 lines 1-67).

Trygg fail to explicitly teach hierarchical tree structure.

However Giles discloses many of the traditional cluster analysis methods, both partitioning and hierarchical, are encumbered by looking for many or all possible clusters within the data this is followed by a cluster consolidation process(see column 2 lines 39-63) and After initialization and input processes, the inventive method finds the optimal "boundary" for each numeric independent input variable and calculates a "score" for each independent input variable, whether the variable is numeric or categoric. The method then finds the best "boundary(ies)" and highest "score" for the combination of the two highest scoring independent variables and is repeated for the three highest scoring independent variables. This can be repeated for any number of independent variables and the "score" which is critical to the analysis process is basically a decision criteria. While there are many ways to calculate a "score", the following describes an exemplary way which appears to work well for manufacturing data. First, a numeric variable value is defined as "included" if the value is between the "boundary" and the maximum or minimum value for that variable, depending on whether

the "boundary" is on the high or low side of the average for that variable. For categoric variables, "included" is determined by which of two values (i.e., categories) the variable has. One type of outcome is referred to as "bad", and the other is referred to as "good". For combinations of variables, the values of all of the variables for a particular process operation must be within the defined region of parameter space for the record associated with that operation to be "included". An exemplary "scoring" method used within the exemplary program is as follows. (see column 4 lines 48-67 and column 5 lines1-5).

Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the teachings of Trygg to include arranged in a hierarchical tree structure in the computer for calculating with the prediction model in a first root layer of the hierarchical tree structure, an output value from at least one attribute included in the input data by a calculation unit of the computer taught by Giles in order to determining the combination of variables and values of those variables which are most likely to result in specific outcomes.

Trygg and Giles fail to explicitly teach comparing the output value with a threshold and comparison result.

However Morrison discloses to implement a PLS or other regression analysis, the block 114 first develops a set of training and/or test records from the data values or the selected potential model input and output variables, wherein each training and/or test record has one value for each of the selected potential model input and output variables. The block 114 then runs, for example, a PLS routine to calculate a correlation or regression coefficient b which identifies the correlation between an output score matrix U and an input score matrix T developed from the values of the selected potential model input and output variables.(see column 12 lines 23-32 and column 5 lines 7-67).

Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the teachings of Trygg and Giles to include comparing the output value with a threshold and comparison result taught by Morrison in order to construct models of a process based on process data measured during previous runs of

that process and more particularly to system and method of automatically determining an appropriate set of input variables for use in a process model.

Trygg, Giles and Morrison fail to explicitly teach wherein any one of the prediction models of any other than the final leaf is one of a scoring model to calculate a score from attributes of the input data and an attribute prediction model to predict from attributes of input data a value of another attribute and wherein the prediction models of the final leaf layer are scoring models.

However Sasaki discloses Secondly, a description will be taken hereinbelow of a feature of this embodiment. That is, the arrangement of an area extraction and recognition processing section 25 is as follows. In the area extraction and recognition processing section 25, an object area extraction section 26 carries out an object area extraction processing, which will be described later, on the basis of motion vector information given from the motion detecting section 20 and outputs information to a template data base 27. Further, a 2D (two-dimensional) template matching section 28 fulfills a matching processing on the basis of the data from the template data base 27 to supply the process result to the object area extraction section 26 and the channel encoding section 10. A model-based prediction section 29 reads out the data from a three-dimensional shape data base 30 and implements the picture reproduction processing in a model-based mode on the basis of the data stored in a person memory 31 and a background memory 32, with the process result being given as a subtraction input through the channel encoding section 10 and the change-over switch 18 to the subtracter 8. The person memory 31 and the background memory 32 receive and store the person data and the background data from the object area extraction section.(see column 16 lines 1-67 and column and column 17-8 lines 1-67) and column 2 lines 1-65).

Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the teachings of Trygg, Giles and Morrison to include wherein any one of the prediction models of any other than the final leaf is one of a scoring model to calculate a score from attributes of the input data and an attribute prediction model to predict from attributes of input data a value of another attribute and

wherein the prediction models of the final leaf layer are scoring models taught by Sasaki in order to calculate scores using input data.

As per claim 12, Trygg discloses further including receiving means for receiving the input data from the other computer via a network and sending mean for sending the output value to the other computer via the network. (see column 2 lines 38-67 and column 3-5 lines 1-67 and column 6-24 lines 1-67).

As per claim 15, Trygg discloses a score calculation method comprising:
preparing a plurality of prediction models arranged in a hierarchical tree structure on a memory unit',
inputting data including at least one parameter with a known value and at least one parameter with unknown value by an input unit;
predicting an unknown parameter value of the input data using the prediction model in a first root layer of the hierarchical tree structure(see column 2 lines 38-67 and column 3-5 lines 1-67 and column 6-24 lines 1-67) comparing the predicted parameter value with a threshold to select one of the prediction models in a subsequent layer of the hierarchical tree structure according to a result of the comparison;
repetitiously executing the unknown parameter value prediction and the subsequent layer prediction model selection until the prediction model of a final leaf layer of the hierarchical tree structure is reached(see column 2 lines 38-67 and column 3-5 lines 1-67 and column 6-24 lines 1-67) selecting one of prediction models of the final leaf layer;
calculating a score from the input data using the selected prediction model of the final leaf layer by a calculation unit; and
displaying the score by an output unit. (see column 2 lines 38-67 and column 3-5 lines 1-67 and column 6-24 lines 1-67).

Trygg, Giles and Morrison fail to explicitly teach wherein any one of the prediction models of any other than the final leaf is one of a scoring model to calculate a score from attributes of the input data and an attribute prediction model to predict from attributes of input data a value of another attribute and wherein the prediction models of the final leaf layer are scoring models.

However Sasaki discloses Secondly, a description will be taken hereinbelow of a feature of this embodiment. That is, the arrangement of an area extraction and recognition processing section 25 is as follows. In the area extraction and recognition processing section 25, an object area extraction section 26 carries out an object area extraction processing, which will be described later, on the basis of motion vector information given from the motion detecting section 20 and outputs information to a template data base 27. Further, a 2D (two-dimensional) template matching section 28 fulfills a matching processing on the basis of the data from the template data base 27 to supply the process result to the object area extraction section 26 and the channel encoding section 10. A model-based prediction section 29 reads out the data from a three-dimensional shape data base 30 and implements the picture reproduction processing in a model-based mode on the basis of the data stored in a person memory 31 and a background memory 32, with the process result being given as a subtraction input through the channel encoding section 10 and the change-over switch 18 to the subtracter 8. The person memory 31 and the background memory 32 receive and store the person data and the background data from the object area extraction section.(see column 16 lines 1-67 and column
and column 17-8 lines 1-67) and column 2 lines 1-65).

Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the teachings of Trygg, Giles and Morrison to include wherein any one of the prediction models of any other than the final leaf is one of a scoring model to calculate a score from attributes of the input data and an attribute prediction model to predict from attributes of input data a value of another attribute and wherein the prediction models of the final leaf layer are scoring models taught by Sasaki in order to calculate scores using input data.

As per claim 16, Trygg discloses wherein the unknown parameter value predicting step further includes:
obtaining an importance degree of each parameter of the input data;
multiplying the known parameter value of the input data by the obtained importance degree of the parameter and accumulating the multiplications', and

comparing the accumulation result with a threshold to predict the unknown parameter value according to the comparison result, and

wherein the score calculating step further includes:

multiplying the known parameter value and the predicted parameter value of the input data by respective importance degrees of the parameters and accumulating the multiplications to obtain the score. (see column 2 lines 38-67 and column 3-5 lines 1-67 and column 6-24 lines 1-67).

As per claim 17, Trygg discloses wherein the parameters of the data are attributes of a customer. (see column 2 lines 38-67 and column 3-5 lines 1-67 and column 6-24 lines 1-67).

As per claim 18, Trygg discloses a score calculation system comprising:

a memory unit for storing a plurality of prediction models arranged in a hierarchical tree structure',

an input unit for inputting data including at least one parameter with a known value and at least one parameter with unknown value;

a calculation unit for predicting an unknown parameter value of the input data using the prediction model in a first root layer of the hierarchical tree structure, comparing the predicted parameter value with a threshold to select one of the prediction models in a subsequent layer of the hierarchical tree structure according to a result of the comparison, repetitiously executing the unknown parameter value prediction and the subsequent layer prediction model selection until the prediction model of a final leaf layer of the hierarchical tree structure is reached, selecting one of prediction models of the final leaf layer, and calculating a score from the input data using the selected prediction model of the final leaf layer, and an output unit for displaying the score(see column 2 lines 38-67 and column 3-5 lines 1-67 and column 6-24 lines 1-67).

Trygg, Giles and Morrison fail to explicitly teach wherein any one of the prediction models of any other than the final leaf is one of a scoring model to calculate a score from attributes of the input data and an attribute prediction model to predict from

attributes of input data a value of another attribute and wherein the prediction models of the final leaf layer are scoring models.

However Sasaki discloses Secondly, a description will be taken hereinbelow of a feature of this embodiment. That is, the arrangement of an area extraction and recognition processing section 25 is as follows. In the area extraction and recognition processing section 25, an object area extraction section 26 carries out an object area extraction processing, which will be described later, on the basis of motion vector information given from the motion detecting section 20 and outputs information to a template data base 27. Further, a 2D (two-dimensional) template matching section 28 fulfills a matching processing on the basis of the data from the template data base 27 to supply the process result to the object area extraction section 26 and the channel encoding section 10. A model-based prediction section 29 reads out the data from a three-dimensional shape data base 30 and implements the picture reproduction processing in a model-based mode on the basis of the data stored in a person memory 31 and a background memory 32, with the process result being given as a subtraction input through the channel encoding section 10 and the change-over switch 18 to the subtracter 8. The person memory 31 and the background memory 32 receive and store the person data and the background data from the object area extraction section.(see column 16 lines 1-67 and column and column 17-8 lines 1-67) and column 2 lines 1-65).

Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the teachings of Trygg, Giles and Morrison to include wherein any one of the prediction models of any other than the final leaf is one of a scoring model to calculate a score from attributes of the input data and an attribute prediction model to predict from attributes of input data a value of another attribute and wherein the prediction models of the final leaf layer are scoring models taught by Sasaki in order to calculate scores using input data.

As per claim 19, Trygg discloses wherein the calculation unit obtains an importance degree of each parameter of the input data, multiplies the known parameter value of the input data by the obtained importance degree of the parameter,

accumulates the multiplications, and compares the accumulation result with a threshold to predict the unknown parameter value according to the comparison result, and the calculation unit multiplies the known parameter value and the predicted parameter value of the input data by respective importance degrees of the parameters and accumulates the multiplications to obtain the score. (see column 2 lines 38-67 and column 3-5 lines 1-67 and column 6-24 lines 1-67).

As per claim 20, Trygg discloses wherein the parameters of the data are attributes of a customer. (see column 2 lines 38-67 and column 3-5 lines 1-67 and column 6-24 lines 1-67).

As per claim 21, Trygg discloses a score calculation program including codes executable by a computer, to execute:

preparing a plurality of prediction models arranged in a hierarchical tree structure ön a memory unit;

inputting data including at least one parameter with known value and at least one parameter with unknown value by an input unit;

predicting an unknown parameter value of the input data using the prediction model in a first root layer of the hierarchical tree structure(see column 2 lines 38-67 and column 3-5 lines 1-67 and column 6-24 lines 1-67) comparing the predicted parameter value with a threshold to select one of the prediction models in a subsequent layer of the hierarchical tree structure according to a result of the comparison(see column 2 lines 38-67 and column 3-5 lines 1-67 and column 6-24 lines 1-67) repetitiously executing the unknown parameter value prediction and the subsequent layer prediction model selection until the prediction model of a final leaf layer of the hierarchical tree structure is reached',

selecting one of prediction models of the final leaf layer;

calculating a score from the input data using the selected prediction model of the final leaf layer by a calculation unit; and

displaying the score by an output unit(see column 2 lines 38-67 and column 3-5 lines 1-67 and column 6-24 lines 1-67).

Trygg, Giles and Morrison fail to explicitly teach wherein any one of the prediction models of any other than the final leaf is one of a scoring model to calculate a score from attributes of the input data and an attribute prediction model to predict from attributes of input data a value of another attribute and wherein the prediction models of the final leaf layer are scoring models.

However Sasaki discloses Secondly, a description will be taken hereinbelow of a feature of this embodiment. That is, the arrangement of an area extraction and recognition processing section 25 is as follows. In the area extraction and recognition processing section 25, an object area extraction section 26 carries out an object area extraction processing, which will be described later, on the basis of motion vector information given from the motion detecting section 20 and outputs information to a template data base 27. Further, a 2D (two-dimensional) template matching section 28 fulfills a matching processing on the basis of the data from the template data base 27 to supply the process result to the object area extraction section 26 and the channel encoding section 10. A model-based prediction section 29 reads out the data from a three-dimensional shape data base 30 and implements the picture reproduction processing in a model-based mode on the basis of the data stored in a person memory and a background memory , with the process result being given as a subtraction input through the channel encoding section 10 and the change-over switch to the subtracter. The person memory 31 and the background memory 32 receive and store the person data and the background data from the object area extraction section.(see column 16 lines 1-67 and column
and column 17-8 lines 1-67) and column 2 lines 1-65).

Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the teachings of Trygg, Giles and Morrison to include wherein any one of the prediction models of any other than the final leaf is one of a scoring model to calculate a score from attributes of the input data and an attribute prediction model to predict from attributes of input data a value of another attribute and wherein the prediction models of the final leaf layer are scoring models taught by Sasaki in order to calculate scores using input data.

As per claim 22, Trygg discloses wherein the unknown parameter value predicting step further includes:
obtaining an importance degree of each parameter of the input data;
multiplying the known parameter value of the input data by the obtained importance degree of the parameter and accumulating the multiplications', and
comparing the accumulation result with a threshold to predict the unknown parameter value according to the comparison result, and
wherein the score calculating step further includes:
multiplying the known parameter value and the predicted parameter value of the input data by respective importance degrees of the parameters and accumulating the multiplications to obtain the score. (see column 2 lines 38-67 and column 3-5 lines 1-67 and column 6-24 lines 1-67).

As per claim 23, Trygg discloses wherein the parameters of the data are attributes of a customer. (see column 2 lines 38-67 and column 3-5 lines 1-67 and column 6-24 lines 1-67).

Conclusion

Response to Arguments

5. Applicant's arguments files on 10/11/2006 have been fully considered but they are moot in view of new grounds of rejection.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Clement B Graham whose telephone number is 703-305-1874. The examiner can normally be reached on 7am to 5pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hyung S. Sough can be reached on 703-308-0505. The fax phone numbers for the organization where this application or proceeding is assigned are 571-273-8300 for regular communications and 703-305-0040 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-305-3900.

CG

Dec 12, 2006

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